

Volcanic pulses in the siberian traps as inferred from permo-triassic geomagnetic secular variations

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Abstract

© Cambridge University Press 2015. There is little reason to believe that eruption of the Siberian Traps occurred gradually. On the contrary, trap emplacement likely occurred in the form of brief but voluminous volcanic pulses, as for example demonstrated for the Deccan Traps (Chenet et al., 2008, 2009) in India and for the Karoo Traps (Moulin et al., 2011, 2012) in South Africa. To search for evidence of such pulses during formation of the Siberian Traps, and to obtain time constraints on eruptive activity we have undertaken a paleomagnetic study of several important trap volcanic sections from the Norilsk and Maymecha-Kotuy areas (Figure 5.1). To complement our work, we include paleomagnetic directions published by Heunemann et al. (2004) from the Norilsk area. A brief description of the sampling areas and the paleomagnetic results are presented below. Sampling Detailed paleomagnetic sampling was carried out on the Medvejia and Truba sections in the Maymecha-Kotuy region (Figure 5.1a, b) during field seasons in 2008 and 2009, and on the Sunduk and Ergalakh sections in the Norilsk region in 2010 (Figure 5.1c). Between 8 and 20 oriented hand samples were collected from individual lava flows or tuff units. In total, about 1400 samples, representing 133 lava flows, were collected and studied.

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